Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition for Rulemaking to Amend and Modernize	)	
Parts 25 and 101 of the Commission's Rules to	)	RM-11791
Authorize and Facilitate the Deployment of	)	
Licensed Point-to-Multipoint Fixed Wireless	)	
Broadband Service in the 3700-4200 MHz Band	)	

REPLY COMMENTS OF SPEEDCAST COMMUNICATIONS, INC.

Speedcast Communications, Inc. ("Speedcast") hereby replies to comments submitted in response to the petition for rulemaking filed by the Broadband Access Coalition ("BAC") and placed on public notice released by the Federal Communications Commission ("Commission").[1] Speedcast agrees with many commenters that the BAC's request would impair the provision of telecommunications services throughout the United States, including rural, remote and underserved areas that rely on broadband satellite services for essential connectivity. The BAC's proposal to significantly modify the well-established full-band, full-arc licensing framework for fixed-satellite service ("FSS") earth stations in the 3700-4200 MHz band is unsubstantiated by facts and contrary to the public interest.

Speedcast supports the existing full-band, full-arc licensing policy, which promotes key public policy objectives and provides FSS operators with essential operational flexibility. As many commenters point out, the BAC's suggestion to eliminate this policy in the 3700-4200 MHz

[1] *See Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3700-4200 MHz Band*, RM-11791 (filed June 21, 2017) ("BAC Petition"); *see also* Consumer & Governmental Affairs Bureau, Reference Information Center, Petition for Rulemakings Filed, Public Notice, Report No. 3080 (July 7, 2017).

band is unwarranted and fails to recognize the policy's critical role in permitting Speedcast and other C-band satellite service providers to play an essential role in providing broadband services to customers throughout the United States.

Moreover, the BAC has failed to meaningfully demonstrate that its proposed changes to C-band FSS licensing policies would protect existing and future earth station operations. The BAC elusively addresses such concerns by asserting that it is "confident that such changes can be accommodated without retaining 'full band, full arc' coordination policies."[2] Granting the BAC's request to change the existing earth station licensing scheme would endanger critical C-band satellite services, including those supporting distance learning, medicine and government services in remote locations, as well as critical mining, oil and gas and similar operations.

Finally, Speedcast agrees that the Commission should deny the BAC Petition and consider the issues raised among the broader issues to be studied in the Notice of Inquiry on the use of mid-band spectrum between 3.7-24 GHz (the "Mid-Band NOI").[3] As other commenters pointed out, the Mid-Band NOI intrinsically includes the key issues raised in the BAC Petition and separate consideration would require duplicative filings and create an administrative burden on the applicants and the Commission. Thus, the Commission should pursue a more efficient rulemaking process by denying the BAC Petition and reviewing any potential changes to the existing licensing and coordination scheme in the 3700-4200 MHz band in the same proceeding.

For the reasons discussed, Speedcast agrees that the BAC proposals would harm the public interest by undermining the significant use of the 3700-4200 MHz band for earth station operations

[2] BAC Petition at 26.

[3] *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 4.2 GHz,* Notice of Inquiry, GN Docket No. 17-183, FCC 17-104 (Aug. 3, 2017) ("Mid-Band NOI").

in the United States and impairing the ability of satellite services to be provided and managed effectively. Accordingly, the Commission should reject the BAC's request for changes to earth station coordination procedures and retain the full-band, full-arc earth station licensing policy.

I. Speedcast Has Made Significant Investments in C-band Services and Any Decision by the Commission Will Have a Direct Impact on Its Ongoing Operations in the United States

Speedcast, a global provider of satellite-based communication services, continues to make significant investment in and utilization of the C-band to provide critical satellite services for customers in the energy, mining and maritime industries throughout the United States. The 3700-4200 MHz band is essential for Speedcast's ongoing operations and the proposed changes would have grave impacts on its ability to provide reliable satellite services. Speedcast's recent acquisition of Harris CapRock Communications Inc. has significantly increased its C-band earth station assets in the United States[4] and Speedcast continues to coordinate the full-band, full-arc (i.e., from 3700-4200 MHz) to support customer terminals located onshore and offshore facilities,[5] earth station onboard vessel ("ESV") services in U.S. and international waterways,[6] and C-band gateway/hub operations in the United States.[7] The Commission's current licensing regime

[4] *See* Speedcast Communications, Inc., File Nos. SES-T/C-20161107-00880, Call Sign E000015 & SES-T/C-20161107-00874, Call Sign E030159.

[5] *See, e.g.*, Speedcast Communications, Inc., File Nos. SES-MOD-20170427-00474, Call Sign E030159; SES-MOD-20170427-00482, Call Sign E050206; and SES-MFS-20160112-00008, Call Sign E050332.

[6] *See* Speedcast Communications, Inc. File Nos. SES-MOD-20151210-00928, Call Sign E090176 and SES-MFS-20161006-00829, Call Sign E060157.

[7] *See, e.g.*, Speedcast Communications, Inc. File Nos. SES-MOD-20121021-00946, Call Sign E030279; SES-MFS-20081219-01662, Call Sign E030170; SES-MFS-20160214-00134, Call Sign E030253; SES-MOD-20120219-00179, Call Sign E960499; and SES-LIC-20141129-00877, Call Sign E140122.

provides Speedcast with the operational flexibility to serve diverse customer needs and the ability to efficiently respond to outages, emergencies and other exigent circumstances such as communications restoration and disaster recovery situations.

Thus, full-band, full-arc earth station licensing is an integral part of Speedcast's commercial initiative and allows it the flexibility to serve diverse customers using the full C-band spectrum. Modifying this regime as requested by the BAC will significantly and adversely impact Speedcast's ability to provide service to U.S. customers and should be rejected.

II. The 3700-4200 MHz Band is Not Underutilized and Full-Band, Full-Arc Earth Station Licensing is an Essential Policy to Ensure the Reliable Provisioning of Satellite Services in the United States

As the record indicates, the 3700-4200 MHz band is critical for existing and future C-band operations throughout the United States and enables essential broadband satellite communication services to rural areas and remote locations unable to obtain communication services through other means. The record shows that earth stations extensively use C-band frequencies to supply a broad range of services and the Commission itself recently noted this vast services supplied by C-band satellites, including "providing broadband Internet service to consumers (particularly in rural areas), enabling communications on board planes and ships, delivering television programming to cable headends, providing data connectivity for merchant credit card transactions, and supporting corporate data networks."[8]

Multiple commentators made clear the extensive use of C-band earth station in the United States, where there are currently approximately 4,700 registered C-band earth stations.[9] In fact,

[8] *See* Mid-Band NOI at ¶ 8.

[9] *See* Opposition of Intelsat License LLC, RM-11791 (filed Aug. 7, 2017) ("Intelsat Opposition"); Mid-Band NOI ¶ 14.

the evidence before the Commission demonstrates that FSS networks use C-band spectrum efficiently and are far from underutilized, as claimed in the BAC Petition. For example, C-band satellite capacity is used extensively "to ensure reliable distribution of content to more than 100 million American television households each day"[10] and to deliver programming to broadcast affiliates, the head-ends of multichannel video programming distributors ("MVPDs"), and to innovative over-the-top ("OTT") distributors, as well for telecasting live news or sporting events.[11]

Speedcast itself employs C-band spectrum to provide multiple FSS services, including ESVs, C-band VSATs and other fixed earth station facilities. As discussed above, Speedcast coordinates 500 MHz of spectrum from 3700-4200 MHz to ensure optimal delivery and effectiveness of its service. Much like General Communications Inc. ("GCI"), which uses the C-band to support rural and remote areas throughout Alaska,[12] Speedcast coordinates and effectively utilizes the 3700-4200 MHz band to support critical remote operations, including emergency communications, and does so effectively because of the existing full-band, full-arc policy. Among other things, Speedcast relies on the flexibility afforded by the FCC's rules to efficiently shift frequencies and satellites in the event of a transponder or satellite failure or market conditions.

The comments filed by SES also demonstrate the importance of full-band, full-arc flexibility, when over one hundred video programming affiliates relying on AMC-9 had to repoint all the antennas to a different satellite to restore service.[13] SES noted that, absent full-band, full-

[10] Letter from Content Companies to Marlene Dortch, Secretary, FCC, RM-11778 (Jan. 24, 2017) at 1.

[11] *Id*.

[12] *See* Comments of General Communications, Inc., RM-11791 (filed Aug. 7, 2017) ("GCI Comments") at 10.

[13] Opposition of SES Americom, Inc., RM-11791, filed Aug. 7, 2017 ("SES Opposition") at 2-3.

arc licensing of the earth stations at the affiliate sites, restoring distribution of the customer's network "would likely have been completely impossible, and at a minimum would have taken much, much longer."[14] Similarly, as Intelsat notes, "satellite operators routinely address potential or actual interference concerns by moving customers to other available frequency band segments or satellites."[15]

SIA underscores that "satellite networks intensively use C-band frequencies . . . fully reusing the spectrum at each orbital location through dual polarization and multiplying that reuse with satellites spaced two degrees apart across the arc."[16] The record demonstrates that the flexibility provided by the ability to reuse spectrum across the entire 500 MHz band serves a number of public interest objectives, including allowing rapid restoration of service in the event of an outage, permitting adjustments in response to changes in customer requirements, enhancing competition, and facilitating resolution of interference issues.[17] In addition, satellite operators rely on the ability to shift customer traffic among transponders and satellites to optimize network loading and resolve interference.

The BAC's position that the 3700-4200 MHz band is underutilized is unsupported by fact. Speedcast and others continue to make efficient use of C-band spectrum and the Commission's full-band, full-arc satellite licensing policy is an essential component of its commercial operations.

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[14] *Id.* at 2-3. *See also* SIA Opposition at 10 & n.34 (describing PBS's experience in needing to quickly switch satellites in response to an outage).

[15] Intelsat Opposition at 7.

[16] SIA Opposition at 6.

[17] *See, e.g.*, SIA Opposition at 13-15; Intelsat Opposition at 5; SES Opposition at 4-6; Comments of EchoStar Satellite Operating Corp. and Hughes Network Systems, LLC, RM-11778, filed Jan. 9, 2017, at 2

Speedcast shares the view of many commenters that the full-band, full-arc policy promotes important public interest goals and provides FSS licensees with the flexibility necessary to fulfill critical FSS operational objectives.

III. Supporters of the BAC Petition Do Not Provide Evidence of How Protection of C-band Services Would Work or Sufficiently Explore Other Spectrum Options

Speedcast agrees with many commenters that the Commission must ensure that existing uses of C-band spectrum by satellite and terrestrial networks be protected from harmful interference in the event of introduction of new services into the band. While many commenters in favor of the BAC's proposal also recognize the importance of protecting existing spectrum users from interference,[18] none have provided a regulatory approach that would accomplish that goal.

As SES points out, "the BAC Petition does not attempt to suggest how even a change deemed necessary could be implemented if earth station licensees did not have the flexibility conferred by full-band, full-arc licensing."[19] While many of the commenters expressly acknowledged the importance of protecting existing C-band operations under the BAC's proposal,[20] no commenter puts forward an actual means to achieve that solution. In reality, the BAC's proposal would compromise the continuity and reliability of C-band satellite services.

Speedcast agrees with the conclusion of GCI that adoption of the BAC's proposal would cause substantial interference to existing C-band operations. As GCI points out, "the presence of

[18] *See, e.g.*, Comments of National Spectrum Management Association ("NSMA Comments") RM-11791 at 3 (filed Aug. 7, 2017); Comments of the Utilities Technology Council ("UTC Comments"), RM-11791, at 4 (filed Aug. 7, 2017).

[19] *See* SES Opposition at 3.

[20] *See* NSMA Comments at 3; UTC Comments at 4; Comments of Competitive Carriers Association, RM-11791, at 5 (filed Aug. 7, 2017).

even small amounts of external, intentional radiator energy can easily overwhelm the input signal limits of a low-noise amplifier and saturate it", impairing the ability of the earth station to recover the signal.[21] Moreover, given the large number of unlicensed and unregistered receive-only antennas, it will be nearly impossible for fixed wireless point-to-multipoint ("P2MP") service providers to be aware of and coordinate with existing C-band operations, greatly increasing the administrative burden and further hindering the ability to operate in the C-band.

The BAC Petition and its proponents fail to provide evidence that spectrum constraints are a significant factor limiting deployment of terrestrial wireless broadband to rural and underserved areas today. The BAC Petition expressly recognizes that frequencies with propagation characteristics similar to those of C-band spectrum are used now to deliver broadband access, including "lightly-licensed" sub-6 GHz band spectrum to deliver fixed broadband services."[22] The BAC's claim that "heavy use of the 2.4 GHz, 3.65 GHz and 5 GHz bands by broadband providers . . . inject congestion in network use"[23] is unfounded and disregards the Commission's recent adoption of the Citizens Broadband Radio Service ("CBRS") spectrum framework, which aims to address the very spectrum availability issues raised in the BAC Petition.[24]

In its petition, the BAC acknowledges that "the Commission has authorized 100 megahertz of additional priority-licensed spectrum in the CBRS band" but quickly discounts it as unfeasible because of "other categories of operators that are expected to have substantial interest in the

[21] GCI Comments at 15.

[22] BAC Petition at 17.

[23] *Id.*

[24] *See generally Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550–3650 MHz Band,* Report and Order and Second Further Notice of Proposed Rulemaking, GN Docket No. 12-354 (2015) ("CBRS Order").

band."[25] This speculative conclusion dismisses the Commission's intention that the CBRS band be utilized to support "smart grid, rural broadband, small cell backhaul, and other point-to-multipoint networks."[26] The BAC and commenters in favor of the BAC Petition should invest time and resources on opportunities to develop innovative P2MP technologies in the adjacent 3.55-3.7 GHz band, consistent with the Commission's decision, rather than seeking additional spectrum in a band that is thoroughly utilized by and relied upon for critical satellite services.

In the CBRS Order, the Commission specifically identifies P2MP as the type of service that will benefit from the new spectrum framework, noting that the Citizens Broadband Service Device ("CBSD") criteria was created to "allow a wide range of network deployments, including point-to-point and point-to-multipoint transmissions, while maximizing coexistence between and within different tiers of user."[27] In fact, the Commission adopted a higher power level for outdoor rural deployments (like P2MP) to allow for the flexibility that the BAC seeks.[28] Noting the "decreased contention" for spectrum in rural areas, the Commission states, "the higher rural power limits reflect challenges for deploying wireless coverage in rural areas as well as decreased contention for spectrum resources due to lower population density in those areas."[29]

The Commission has clearly contemplated the utilization of CBRS spectrum from 3.55-3.7 GHz to serve the needs of P2MP operations. The commercial opportunities for P2MP in the CBRS

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[25] BAC Petition at 18, n. 37.

[26] CBRS Order ¶ 7.

[27] *Id.* ¶ 211.

[28] *Id.* ¶ 209 ("In non-rural areas, the conducted power limit is the same as Category A (24 dBm), but the EIRP limit is 40 dBm. In rural areas, the conducted power limit is increased to 30dBm per 10 MHz and EIRP to 47 dBm EIRP per 10 MHz.").

[29] *Id.*

band should be fully explored and analyzed prior to the Commission making any decisions on the need for the 3.7-4.2 MHz band. Thus, the BAC position that that the primary obstacle to increased delivery of terrestrial fixed wireless connectivity to rural areas is a lack of available spectrum is wholly unsupported, as is evidenced by the above.

IV. The Commission Should Consider the BAC Petition in the Context of the Mid-Band NOI

The Commission should dismiss the BAC Petition and instead consider the issues raised within the context of the broader issues to be studied in the Commission's upcoming proceeding in the Mid-band NOI (GN Docket No. 17-183). The Mid-Band NOI specifically asks whether the Commission should "allow for the deployment of point-to-multipoint [fixed service] broadband services" in the 3.7-4.2 GHz band.[30] Speedcast agrees with CTIA that the Mid-Band NOI "subsumes" the key issues raised in the BAC Petition and separate consideration would require parties to make duplicative filings and would otherwise be an inefficient use of Commission resources.[31]

In the Mid-band NOI, the Commission will examine the frequencies in "spectrum bands between 3.7 GHz and 24 GHz (mid-band spectrum)" in order to explore "options to expand access opportunities in mid-band frequencies . . . for expanded flexible wireless broadband use."[32] Moreover, the Commission will undertake a detailed analysis of the overall best uses for the 3700-4200 MHz band being sought by the BAC, as well as those for other mid-range spectrum bands,

[30] *Mid-band NOI* ¶ 18.

[31] Comments of CITA and Motion to Extend Reply Comment Date, RM-11791 (filed on Aug. 7, 2017).

[32] *Id.* ¶¶ 1-2.

and there is no need for the Commission to look at issues related to the 3700-4200 MHz band in two separate proceedings.

This position is further echoed in the opposition of Edison Electric Institute ("EEI"), because the Commission is already undertaking a detailed examination of the overall best uses for the 3700-4200 MHz band, there is no need for the Commission to look at issues related to the 3700-4200 MHz band in two separate proceedings. As EEI astutely points out, "although the Commission does not intend the NOI to preclude action on other [ongoing proceedings], granting this Petition and engaging in rulemaking on a subset of the mid-band spectrum before completing the NOI process runs contrary to the benefits of broadly considering the entire mid-band spectrum in one proceeding."[33] In contrast to the Commission's intention for the Mid-Band NOI, granting the BAC Petition would result in piecemeal rulemaking on a subset of the mid-band spectrum without the benefit of developing a broader record.

V. Conclusion

In conclusion, for the reasons set forth above, Speedcast agrees with commenters that the changes sought in the BAC Petition would threaten the satellite industry's ability to provide reliable and continuous service to customers that rely on C-band FSS for essential communications operations and thus is contrary to the public interest. Furthermore, the Commission is already examining issues associated with access to the subject band in the Mid-Band NOI. Accordingly, the BAC's separate petition to change the full-band, full-arc earth station licensing policy in the 3.7-4.2 GHz band should be dismissed.

[33] Opposition of Edison Electric Institute to Petition for Rulemaking, RM-11791 (filed on Aug. 7, 2017); *see also Notice of Inquiry* at ¶¶ 1-7(describing the goals of the NOI and the benefits broadly considering the entire mid-band spectrum at once).

Respectfully submitted,

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